close; hence these conditions render difficult the penetration of the head of the femur, by the inferior fragment, but greatly facilitate, and render almost inevitable, the entrance of the lower part of the neck into the trochanter, or upper part of the body of the bone. Almost all fractures of the neck of the femur are the result of falls upon the great trochanter. Of fifty-seven cases recorded by Sabatier, Dessault and W. Smith, one only was occasioned by a false step.

The lower and inner part of the neck being continuous with the anterior surface of the body of the femur, whilst it is separated from the posterior face by a well-marked cavity, and by the projecting line which descends from the great to the small trochanter, accounts for the penetration being almost always in front, as well as for the rotation of the limb outwards. Indeed, the axis of the neck of the femur corresponds to the anterior third of the great trochanter, and the fall occurring upon the middle part of this apophysis, tends to efface the digital cavity, as well as to bring into contact the inner surface of the great trochanter, and the posterior surface of the neck, and to cause the protrusion of the latter anteriorly, so that the point fractured forms with the body of the bone an obtuse and prominent angle,—whence results the rotation of the limb outwards.

M. Robert observes that penetration is rare in intra-capsular fractures; he cites one example only, existing in the Musée Dupuytren, where the penetration was incomplete, and limited to the inferior and posterior part of the base of the neck.

On the other hand, it appears from the observations of various authors that although penetration is frequent in extra-capsular fractures, it is common only in old persons, especially those in whom the neck of the femur is voluminous. These fractures are usually seen in the base of the neck; anteriorly, they follow the line which extends from the great to the small trochanter; posteriorly, they are seen at one-fifth to one-fourth of a line from the slight ridge which connects these eminences; they frequently terminate above the small trochanter, but sometimes pass beyond it. The angle formed by the neck with the body of the bone is diminished, and sometimes the neck undergoes a rotatory movement upon its own axis. Mr. Adams has recorded an instance where the fracture was incomplete, the upper border preserving its integrity, whilst the inferior surface was forced into the cancellated texture of the body of the bone. Penetration may be complete or incomplete; the latter being much the more frequent. Extra-capsular fracture of the neck of the femur is generally associated with fracture of the great trochanter, but this complication never exists in intra-capsular fractures.

M. Robert enumerates the following as the principal symptoms of the fracture of the femur with penetration: (1) slight shortening of the limb; (2) almost constant, but often slight deviation of the limb outwards; (3) pain, more intense and external, than when the fracture is intra-capsular. These are constant and most characteristic symptoms. (4) Ecchymosis upon the outer part of the thigh; (5) swelling over the situation of the great trochanter; (6) the capability of walking after the fall which had occasioned the fracture; (7) the capability of raising the limb as a whole; (8) the resistance of the limb to any attempts at extension. Upon this last symptom, M. Robert founds a caution as to the treatment of patients who have sustained this accident;—reprobating repeated attempts at extension and rotation of the limb.

The prognosis is more favourable in these cases than in those without penetration, as the position of the fragments favours consolidation, so that the patient may move a little about the forty-fifth or fiftieth day.

The author's conclusions respecting the treatment are—that the surgeon should abstain from exercising traction upon the injured limb; that it is necessary to maintain it in a state of immobility; and that a constant lateral pressure should be exerted upon its outer surface. To accomplish these indications he places the patient upon his back, with a small cushion under the ham of the injured limb, and surrounds the hips with a tight bandage.—*Lond. Med. Gaz.*, May, from *Bulletin de l'Acad.*, 1844.

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59. *Case of Tubular Aneurism undergoing spontaneous cure; with observations.* By J. Luke, Esq.—Wm. Dobbins, aged 31, dock-labourer, a stout muscular man, in the enjoyment of good general health, and temperate in his habits, was admitted into the London Hospital, Feb. 19th, 1845, on account of a tumour, which occupied

the upper part of the right thigh. The tumour was of an oblong form, extending from Poupart's ligament down the thigh between three and four inches, in the direction and situation of the femoral artery, and projecting anteriorly more considerably near its lower extremity than at its upper. The transverse measurement of the tumour, immediately beneath the ligament, was about two inches, increasing in its descent to nearly three inches. There was very strong pulsation uniformly over its whole surface, which caused the finger to be raised perceptibly when laid on it. The tumour enlarged at each pulsation equally in all directions, so that the fingers were forced asunder during each pulsation, and were again approximated at its termination. A lymphatic gland or two lay anteriorly, but the tumour was otherwise compressible, and capable of being emptied of its contents, yet filled again on the remission of pressure. There was not any sound or bruit discovered when the stethoscope was applied, nor did the patient complain of any pain in the part. He; however, had a feeling of weakness in the limb generally, which prevented him from carrying burdens such as he had been accustomed to carry. He also experienced a slight lameness, and an occasional cramp, in the muscles of the calf. The temperature of limb was not diminished, and the arterial trunks below the tumour pulsated as strongly as in the opposite limb. There was an old cicatrix of a bubo in the groin.

He stated, that the first discovery of the tumour was made about a year before his admission, when undergoing an examination before entering into a club. It did not then give him any inconvenience, nor can he assign a cause for its origin, but thinks it probable that it was produced by lifting heavy weights. He is of opinion that it was as large when first discovered as it is at present. He thought nothing of the tumour for six months, at the end of which, when running, he was suddenly seized with cramp in the muscles of the thigh and calf, and pain in the groin, which latter induced him to put his hand to the part. Although not enlarged he found the swelling pulsated more violently than before. From that period the leg had become stiff and weak; slight exercise also brought on cramp, with an increase of pulsation and pain in the tumour. There was also an occasional feeling of coldness in the limb.

With a conviction on the mind that the tumour was aneurismal in his character, it was thought improper to place implicit credence in the patient's statement, that it had not increased in size since its first discovery. He was, therefore, placed in bed, with the intention of determining by personal observation whether or not it underwent any increase in its dimensions; the determining of this point being necessary to guide the opinion and the advice as to the course best to be pursued in his case. It was thought that the application of a piece of adhesive plaster spread on leather, and of a spica bandage over it, was quite compatible with these intentions. They were accordingly applied over the tumour March 3d, and not again disturbed until the 8th. On their removal on this day, it was found that a considerable change had been effected in the tumour. Instead of being soft and compressible, and capable of being emptied of its contents, it was hard and unyielding, and slightly painful on pressure. It was further observed that its pulsation had entirely ceased, as well as the pulsation of all the arterial trunks of the limb; the femoral, popliteal, and anterior and posterior tibial arteries, having in turn been examined. The foot and leg felt colder to the hand than the opposite, although the thermometer did not indicate any actual diminution of temperature. While collecting information respecting a state of things so unexpected, the patient stated that when the plaster and bandage were first applied he experienced considerable pain in the tumour for about half an hour, attended by an unusually violent throbbing, which perceptibly raised the bandage. At the end of that time the throbbing ceased, and there had not been any return. The plaster and bandage were reapplied, and the limb was wrapped in wool.

On the 22d of March the tumour was still hard, consolidated, and without any pulsation. There was apparently an obliteration of its cavity, the contents of which had undergone some diminution from absorption. Mercurial ointment spread on lint was applied, and the patient allowed to move out of bed.

April 2d.—He has walked about, and, he states, with greater ease and freedom than when admitted; but the pain in the calf remained.

19th.—Has left the hospital for about ten days, but, as requested, paid the hospital a visit to-day. He still complained of pain in the calf, especially when going up stairs. There was also numbness of the foot at times. The circulation was apparently restored sufficiently for the proper nourishment of the limb, yet pulsation had not returned in any of the arterial trunks. The size of the tumour had undergone very considerable diminution, and the aneurism had been without doubt cured.

In the intentionally brief remarks which I propose to make upon the above very interesting case, I would wish to first call attention to the unsatisfactory use of terms employed to distinguish the different kinds of aneurismal diseases from each other. It may be generally asserted that any change of terms in common use is decidedly objectionable so long as they convey definite ideas; but when they fail to do this, a change becomes desirable. It is for this reason that the terms *true* and *false*, and *diffused*, as applied to aneurisms, are unsatisfactory; because they failed to convey a meaning uniformly of the same import to all, and require some circumlocution for their explanation. Thus, some surgeons employ the term "true" to designate all kinds of aneurisms in which a sac is formed as a result of disease; whilst others restrict it to dilatation of the tunics only. Again, others exclude the uniform dilatation of the tunics altogether, and mean merely by the term a partial dilatation of one side of an artery. So also the term "false" is used to designate all aneurisms without previous dilatation of the tunics, whether they are the result of ulceration, rupture, or wound; while some apply the term "diffused" to aneurisms arising from the latter cause. However much I may generally be indisposed to change terms, I think these may with advantage be allowed to become obsolete, especially as others may readily be found which will designate the particular forms of disease by their own import.

Thus the different kinds of aneurism may conveniently be thus designated:—1st. To the most common kind, characterized by the existence of a sac, the term "saccated" may with propriety be applied as simply indicative of that fact, without entering into any speculations as to the means by which the sac is produced. If we wish to make distinctions of the saccated form, we might use the term "traumatic" for those forms of it which are the result of wound. 2dly. There is a form of aneurism characterized by a pretty nearly uniform dilatation of the tube of the artery, of which the case above related forms an example. This, by some surgeons, has been considered not to be aneurism at all; while by others it has been regarded as the true form of that disease. From the circumstance of the tube of the artery undergoing a pretty uniform dilatation, I think that the term "tubular" would not be inappropriate, and would express adequately the kind of disease meant to be designated. 3dly and 4thly. The terms "dissecting aneurism" and "varicose aneurism" are sufficiently expressive of the forms of disease to which they are at present applied, and need no further observation. But 5thly. The term "aneurism by anastomosis," as it involves an hypothesis, may be advantageously changed for "capillary aneurism," as merely conveying an idea that the minute or capillary vessels are the structures affected. Thus we have—

1. Saccated aneurism, including traumatic,
2. Tubular aneurism,
3. Dissecting aneurism,
4. Varicose aneurism,
5. Capillary aneurism;

under which terms may be embraced every known variety.

With regard to the case above related, the first circumstance which calls for comment is the external form of the tumour. In this respect it is generally by no means so globular as the saccated disease, but is usually oval, or rather fusiform, with the long axis lying in the course of the arterial trunk. The external form results from the manner in which the disease is developed, which, in cases similar to the above, is by a limited but pretty uniform expansion of the arterial tunics, with a corresponding enlargement of the area of the vessel at its dilated part. The extent of the vessel so dilated varies, but above and below the diseased part the artery retains its healthy dimensions. From this state of things arise some important considerations.

It will be recollected, that in saccated aneurism the blood is thrown out of the course of the circulation into the sac, where, probably, the influence of the current is so far diminished in certain cases as to allow the contents to become partially quiescent, and thereby disposed to coagulate. In the tubular form, however, the whole force of the current passes through the centre of the dilated part, and must obviously tend to counteract any disposition to coagulation of the blood contained therein. It is to this cause that the absence of solid contents has been usually attributed, as well as the greater softness of the tumour, and its capability of being entirely emptied by pressure. We might also be disposed to think that in this circumstance we see a cause tending to counteract any disposition which might exist towards a cure.

Another circumstance worthy of observation is the usually very low rate of increase of the tumour in such cases. This is in accordance with what should be expected when the resistance of the arterial tunics and the force of the current of blood are nearly equal in amount; and we might infer that they are so in this form of disease by simply witnessing the fact of this slow increase. But it might be supposed that as the tunics become thinner by expansion, their resistance would become less able effectively to oppose the force of the current of blood, and that consequently they would yield proportionably more rapidly as the tumour became larger. I believe the reverse to be the fact, arising from the force of the circulation upon the interior of the expanded part being diminished in a greater ratio than the resistance of the vessel, from well-known causes which in hydraulics influence the force of currents passing from small tubes into those of larger dimensions. It is not difficult to imagine that, in the progress of tubular aneurism, a status may at last be arrived at, in which no further increase of the tumour would take place; simply from the influence of the dilatation upon the force of the current at the part. Nor am I satisfied that, in the above case, such a status had not been attained: for it was remarked by the patient that he had not observed any increase of the swelling during the twelve months which he had cognizance of its existence.

The last and most important consideration is that relating to the means by which the cure in the above case was effected. It must be evident, however, that little positive information can be gained upon this subject, and we must consequently be content with mere surmise, or form our opinion from general considerations. It is the common practice in such cures, and in those which take place in the saccated form of disease, to attribute them to the occurrence of coagulation of the blood within the artery or within the sac, which, by occlusion of the vessel or sac, prevents the ingress of fresh blood, and consequent increase of the disease. I am disposed to think that such explanation is unsatisfactory, both in reference to the case related and to aneurisms generally, when they undergo spontaneous cure.

The question is one of some moment, and perhaps may merit a few observations, particularly as it has a practical bearing. It is well known that, in examining the sac of an aneurism, it is not unusual to find both fluid and solid contents, the first being blood; the last being generally supposed to be blood in a coagulated state, but changed in its character. By attending to the last, it will be found (as pointed out by Mr. Wardrop in the Cyclopædia of Surgery), that it consists of two portions; the one coloured, the other nearly colourless. The coloured portion being undoubted coagulum, retains the common characteristics of that substance, and usually, but not always, occupies the central part of the sac. It is to the colourless, or what I have *called* the colourless portion, that I wish to direct attention, because it is on this that the curative process mainly depends. This portion mostly adheres to the interior of the sac, but the adhesions are easily separable; so that it is sometimes found partially or wholly separated, probably by causes exterior to the sac. It is formed in layers, and the laminated arrangement is easily seen when a section is made. These layers are sometimes but loosely connected with each other, and being imposed on each other, are necessarily concentric. The common explanation given of their formation is, that they are produced by successive deposit, from the blood flowing through the sac: thus Mr. Hodgson, in speaking of the spontaneous cure, says, "*the cavity of the sac* is gradually filled with layers of coagulum." Mr. Wardrop, however, has adduced some reasons for supposing that these layers are the result, not of coagulation, but of an action taking place in the parietes of the sac. The reasons which he adduces may perhaps fail of carrying conviction to the mind (a fate which may also attend the additional reasons which I shall presently adduce), yet they are sufficiently cogent to deserve serious consideration. Those which he principally relies on, are the "great difference in the anatomical characters of a common clot of blood and a fibrinous concretion;" "the concreted fibrin having its interior surface smooth and polished;" and the "vascular connection," which he has every reason to believe exists between the fibrinous concretion and the sac. The additional reasons, which have convinced me that the common explanation of these formations is incorrect, are derived from the examination of the fibrinous layers themselves, and the occasional interposition of *coloured* coagulum between them, or between them and the sac. It is not in every case that these interpositions are found; but when found, their relations to the colourless laminæ are most important, if not conclusive evidences for the elucidation of this subject.

If we adopt the common supposition that the whole solid contents of a sac are mere deposits from, or coagulations of, the blood, the explanation of the arrangements in the production of the colourless laminæ with respect to these coloured masses is almost unintelligible; for we cannot explain how it happens that, if the whole mass be the result of one process of formation, parts of it, which lie close together, or are enclosed the one within the other, acquire different characters, such as those coloured and colourless contents possess. Under a real similarity in the process of formation, it seems most highly probable that they would present also a similarity of appearances, and that they would be either entirely coloured, or entirely colourless, but not with the coloured and uncoloured parts intermixed, as we sometimes find them.

I think, therefore, we must discard the opinion that the solid contents of an aneurism are the result of one process only of coagulation, as failing to afford a satisfactory explanation of the phenomena. All difficulty, however, vanishes if we assume two separate processes. There can be little doubt that the coloured contents are coagula of blood, as they retain appearances sufficiently characteristic for their recognition as such. It is in looking to the position which these occupy with respect to the uncoloured or fibrinous concretions by which they are surrounded, that we are led to a satisfactory explanation of the manner in which the latter are produced. When we look at these clots, we find them either entirely surrounded by colourless fibrinous concretion, and excluded thereby from the fluid blood passing through the sac, or lying between the fibrinous concretion and the sac itself,—in which latter situation they may or may not be excluded from contact with the fluid blood. When in the former of the two positions, we cannot account for their insulated situation, unless by supposing the clot to have been formed upon the surface of a fibrinous mass, and becoming subsequently enclosed by new deposits of fibrin, gradually augmented until the clot becomes central with regard to the whole mass. But in the latter situation blood may be insinuated between the fibrinous concretion and the sac, when, as before mentioned, they become separated by an accidental cause, in which case blood so insinuated will coagulate, and retain its characteristics.

Having determined these points, we have next to discover on which surface of the fibrinous concretion these minute clots are really formed. If it be on the interior, or that surface which is in contact with the circulating blood of the sac, it is then no doubt derived from that blood; and the fibrinous concretions, by which it eventually becomes enclosed, are equally derived from the same source. On the contrary, if it be on the exterior, or that surface in contact with the sac, the fibrinous concretions which subsequently inclose it are, with equal certainty, derived from the sac; since, by the formation of new adhesions after the clot has formed, the circulating blood becomes excluded, and no other source remains than the sac, from which any accretion of new matter can be derived.

I am disinclined to the former supposition, from my belief that had the clot been so formed, the subsequent deposits, by which it becomes enclosed, would be of the same character and colour as the clot itself; and a wholly different appearance from that which we actually find would result therefrom. On the other hand I adopt the latter supposition, not only as more in accordance with our general ideas of the reparative process, but also, and more particularly, from the observations I have had an opportunity of making upon the aneurismal contents. Thus a small coloured clot had formed between the sac of an aneurism and the fibrinous concretion contained within it, arising, I believe, from the passage of blood into a space left by a slight separation of the two from each other. The further ingress of blood had been prevented by new adhesions, and the process of inclosure had commenced by the deposit of a thin layer of fibrinous matter upon its exterior surface, which matter adhered to the sac, and had no doubt been formed subsequently to the coloured clot. A similar enclosure had occurred to another clot in the same aneurism, but which, by the deposit of a greater number of fibrinous layers, had become more deeply buried within the fibrinous mass, and consequently more centrally with respect to the aneurismal tumour.

Taking the order of sequence of the deposits to be as I have stated, it follows that, the blood not having access to the exterior fibrinous layers, by reason of their adhesions to the sac, any increase which accrued to them could not have been derived from the blood, but must of necessity have been derived from the sac itself, with which alone they were immediately connected. Granting this mode of formation of the exterior layers, a proof of a strongly presumptive kind is established, that the whole of the fibrinous layers were formed in a similar manner, and that the whole were the result of successive formations, each pushing its predecessor forward upon the cavity of the sac, and being itself in turn pushed forward by its successor, and enclosing a portion of coloured coagulum which had fortuitously become congealed upon the surface.

This may, perhaps, be sufficient to show the general tendency of this argument to prove the sac itself, or more properly its vessels, to be the efficient agents in these fibrinous formations, although much else may be adduced both from examinations of the aneurismal contents, and the analogies of other diseases.

The space I have already occupied must be my excuse for not proceeding further upon this point. It must be evident, however, that if the fibrinous concretion be derived from the sac, and not from the blood, the order of increase must be different from that which is generally supposed. Instead of growing by deposits on its inner or central surface, the increase must take place from the exterior surface which lies in contact with the sac. The action itself by which the vessels deposit the fibrinous accretion is probably of the plastic kind, and bears a certain analogy to the adhesive processes in other parts. Such being the probable means by which nature attempts to cure in these diseases, we are enabled, by the knowledge of them, so to conduct our treatment as at least not to counteract her efforts. We may thus assign a reasonable ground for objecting to a practice which experience has already shown to be injurious, and can view the abstraction of blood not as a means of promoting coagulation of the blood, but as a means merely of diminishing the force of the circulation, and its consequent disturbing influence upon the sanatary plastic actions of the vessels of the sac. We therefore learn to avoid the enormous abstractions of blood formerly, and even sometimes at present so injuriously used, from a conviction that, although they diminish the disturbing influence of a perhaps too powerful circulation, they also to the same, if not to a far greater extent, diminish the reparative action of the vessels of the sac, from which alone any permanent benefit can reasonably be expected. Neither shall we have the same dread as formerly of the slight inflammations which occasionally arise in the sac, since by such inflammations the curative action is likely to be promoted. Thus, while we learn to direct our endeavours to diminish the disturbing influence arising from the force of the circulation, we at the same time learn to avoid weakening the powers of the system by the use of means which induce extreme inanition.—*Lond. Med. Gazette*, May 9, 1845.

60. *Calculi of the Nasal Fossæ.*—At the beginning of the present year, a patient, labouring under calculus of the nasal fossæ, was treated at the Hotel Dieu, by M. Blandin. M. Demarquay, his house-surgeon, struck by the absence of all details on this disease in the classical writers on surgery, has been induced to make a series of researches, the result of which he has communicated in an interesting paper, contained in the June number of the *Archives Générales.*

Calculi of the nasal fossæ which Graaf calls rhinolithes, appear to have been first mentioned in 1502, by Jos. Mathias de Gardi. Cases of this disease have subsequently been given by Thomas Bartholin, 1654; Clauder, 1685; Kern, 1700; Vitus Reidlinus, 1706; Wepfer, 1727; Ruysch, 1733; Plater, 1736; Horn, 1788; Saviales, 1814; Graaf, 1828; Mr. Thouret, 1829; and Sir B. Brodie, (Lancet, July